

1.10

Energy in ecosystems

Review work to begin class:

Habitat	Pond	Ecotone	Field
Organisms Present	algae	aquatic plants	Butterflies
	aquatic plants	butterflies	grasses
	crayfish	cattails	larks
	dragonflies	dragonflies	mice
	dragonfly nymphs	ducks	raccoons
	duck	earthworms	toads
	minnows	frogs	voles
	mosquito larvae	grasses	
	tadpoles	hawks	
	zooplankton	mice	
		snails	

Use the information from the chart to construct a three-dimensional model (food web and chain) or pyramid with names and diagrams. Use all of the above terms.

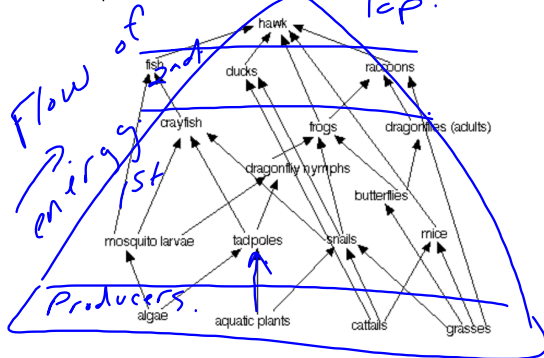
Find page numbers for the remaining Vocabulary terms

1. Heterotroph - not able to make food
2. Niche - role in an ecosystem
3. Omnivore - eats both plants and animals
4. Pest - harmful or inconvenient
5. Photosynthesis - Green Plants convert sun to energy
6. Population - members of a species
7. Primary consumer
8. Producer - Photosynthesis
9. Secondary consumer
10. Thermodynamics; 1<sup>st</sup> and 2<sup>nd</sup> Law
11. Threatened - species that is likely to become endangered
12. Trophic level
13. Vulnerable

1<sup>st</sup> trophic level  
2<sup>nd</sup> & 3<sup>rd</sup> trophic levels  
at risk of becoming threatened.  
Thermodynamics -  
1<sup>st</sup> - energy can be converted from 1 form to another. Never Lost  
2<sup>nd</sup> - some energy is given off as heat  
→ study of energy transformations

14. Autotroph - capable of making its own food.
15. Game Species - animal with recreational and economical benefits

Example answer for food web

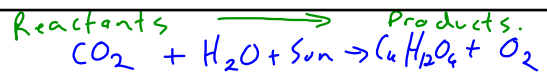


Notes:

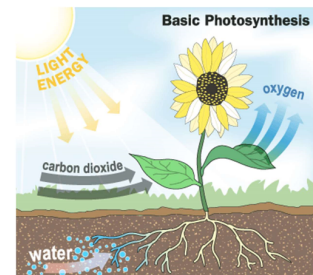
All energy for all ecosystems is the sun.

1. Provides energy for photosynthesis, plants to maintain their lives and create food for all living organisms. Energy for all producers in food chains.

Converts solar energy to chemical energy and stores it in the form of carbohydrates.

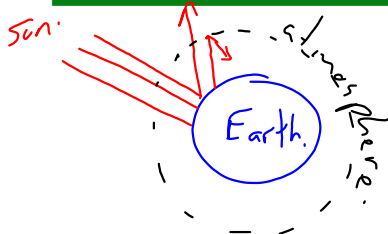
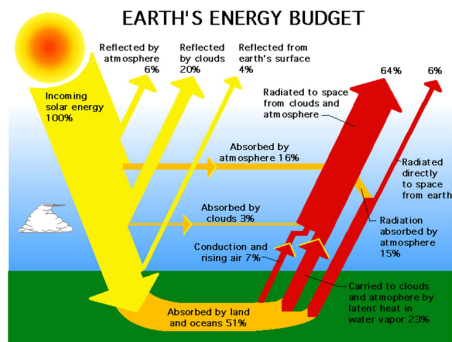


Carbon dioxide + water + sunlight = sugar + oxygen



2. Energy and warmth to evaporate water from oceans to create weather patterns, rain and snow

<http://www.nhc.noaa.gov/>



### Sunlight

1. Harmful high energy cosmic, gamma rays, X-rays and UV rays are reflected or absorbed by chemicals in the atmosphere.
2. Percentage reflected by clouds
3. Heats earth's surface
4. Small percentage generates wind
5. Extremely small percentage used for Photosynthesis
6. Most is sent back to atmosphere in form of heat and radiation

Create your own chart or pie graph that represents the distribution of sunlight that penetrates the atmosphere.

16. Albedo effect is related to how much sunlight is reflected or absorbed. It is the measurement of the percentage of light that an object reflects.

High albedo - Snow, sand, deforested areas - high reflection, little absorption

Low albedo - forests, crops, water - low reflection, greater absorption

amount of sun used on  
Earth

Be able to answer the Understanding Concepts page 33